DOCUMENT RESUME

ED 205 075 HE 014 101

AUTHOR Budig, Jeanne E.: Sallach, David L.
TITLE Student Outcomes Assessment: A Biracial Analysis. AIR Forum 1981 Paper.
PUB DATE May 81
NOTE 29p.: Paper presented at the Annual Forum of the Association for Institutional Research (21st, Minneapolis, MN, May 17-20, 1981).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Alumni: *Black Students: *College Graduates: Comparative Analysis: Educational Benefits: *Education Work Relationship: Employment Experience: *Employment Qualifications: Equal Opportunities (Jobs): Graduate Surveys: Higher Education: Institutional Research: Learning Experience: Outcomes of Education: Race: Student College Relationship: Student Needs: *Whites
IDENTIFIERS *AIR Forum: *Lincoln University MO

ABSTRACT

Alumni of Lincoln University, an historically black and currently multiracial institution, were surveyed for their views concerning their college experience and its effects on their subsequent work experience, and responses were compared based on race. Of the 3,500 alumni who were mailed a newsletter containing the questionnaire, 129 responded. The respondents represented a broad cross-section of Lincoln University alumni, and three-fourths were black and slightly over half were female. Information is also presented on year of graduation and major. On the whole, the former students seemed relatively content with their educational choices. The idea of not attending college was lowest on their list of possible changes, and was, in fact, overwhelmingly rejected. Similarly, the educational process was generally acknowledged to have enhanced virtually all skills that the respondent possesses and applies. Respondents reported a general pattern of a somewhat lower skill level than their current employment applies, and this reinforces the idea of a need for greater, or more effective, college exposure. However, discrimination, and employment opportunity, rather than low educational or skill qualifications, appeared to present the major difficulties in first job searches. This general pattern was not dependent upon the respondents' race: the most striking racial pattern is the absence of significant attitudinal differences between black and white alumni. Nevertheless, blacks experienced more job discrimination, and felt that the skill applications were generally more intensive than did their white counterparts. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED205075

04

STUDENT OUTCOMES ASSESSMENT:

A BIRACIAL ANALYSIS

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Association for
Institutional Research
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Dr. Jeanne E. Budig
Director, Planning and Analysis
Associate Professor of Education

Dr. David Sallach
Assistant Professor of Sociology

Lincoln University
Jefferson City, Missouri

HE 014 101

Presented at the 1981 Association for Institutional Research Forum, Minneapolis, May 20, 1981

THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

This paper was presented at the Twenty-First Annual Forum of the Association for Institutional Research held at the Leamington Hotel in Minneapolis, Minnesota, May 17-20, 1981. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Mary Corcoran
University of Minnesota
(Editor, AIR Forum Publications)

STUDENT OUTCOMES ASSESSMENT: A BIRACIAL ANALYSIS

Dr. Jeanne E. Budig

Dr. David L. Sallach

Lincoln University

Jefferson City, Missouri

During the 1980's more difficult questions are being asked: what do students expect from college? How well are colleges meeting students' needs? And the hardest question of all still demands an answer: does college really matter?

REVIEW OF THE LITERATURE

There has been a growing body of research designed to assess the performance of educational institutions. Much of it has been generated in an attempt to improve educational productivity from the perspective of management (Bowen, 1974, Lenning, Lee, Micek, and Service, 1977, Miller, 1979). Other research has focused upon the determination of appropriate university goals and the value clarification which must accompany the process (Peterson and Uhl, 1977, Micek and Arney, 1974). Less common however has been an emphasis upon the transmission of practical skills, and the extent to which the university prepares students for capable performance in the world of work and community involvement.

Institutional research, which has attempted to develop models for evaluating university performance for accountability purposes, tends to stress the resources and charactoristics of

the university itself. Sagen (1974: 71-76) describes four alternative foci: fixed effectiveness models (based upon enrollment based data), student performance evaluations, resource and process evaluation, and evaluation of faculty performance. None of these approaches, however, adequately answer the question: what skills has the student acquired, and how useful are they in the performance of responsibilities at work and in the community?

The "Institutional Goals Inventory" provides a different approach which emphasizes the diverse objectives which may be incorporated into the university mission. While a distinction is made between process goals (e.g., freedom, democratic governance) and outcome goals (e.g., intellectual orientation, humanism/altruism), neither category addresses the extent to which practical skills are actually conveyed. Two of the most relevant outcome goals (vocational preparation and meeting local needs), for example, are formulated in terms of the outcomes sought by the university or community, rather than the student. Thus, the university should try "to provide opportunities for students to prepare for specific occupational careers", and "provide skilled manpower for local-area business, industry and government" (Peterson and Uhl, 1977: 6-7), but the process is still one of establishing university priorities, rather than assessing the conveyance of useful skill to students.

NCHEMS has recently suggested an student-outcomes research strategy designed to collect data at critical points in the

education process (Gray, 1979: 9-11). One of the data collection points is from alumni who are able to assess the value of their educational experience as it applies to the non-academic world. Such an approach is a departure from the more traditional approach of viewing the alumni exclusively in terms of fund-raising programs (but cf., Bowen, 1978: 230-232). Rather than rely on indicators defined by administrators, researchers or model builders, it allows students to provide their subjective assessment of how (and to what extent) their skills were enhanced, and what, if anything they would change concerning their educational program.

Recent research has established significance of subjective assessments of the educational process. Dumont and Troelstrup (1979), for example, conclude that self-report data are particularly appropriate in the evaluation of institutional experience. There is no adequate substitute, they argue, for such data since it provides a unique "indicator for the assessment of general education instructional outcomes" (1979: 12).

Such data may be especially relevant when evaluating potential differences which race interjects into the educational experience, and its subsequent effects. It has long been noted that the return to education, in terms of income, is lower for blacks than for whites (Duncan, 1969; Weiss, 1970). Thus the question is not only how students with post-educational experience assess the contribution of their colleges. It must

also concern differences in that assessment based on racial differences arising from the experience itself, or from the subsequent outcomes at work or in the community. As Bowen (1978: 374) summarizes: "Most studies have been concerned with white males and have been silent about minority groups and women." This trend is also true of those alumni studies which do exist. The objective of the present study is to provide a corrective to this pattern.

RESEARCH DESIGN

The present study seeks to gather alumni assessment of their college experience, and its effects within their subsequent experience. Several of these questions are: 1) to what extent have necessary skills been enhanced by their college study? 2) what skills would they recommend be emphasized in the future? 3) what changes would they make in their college program? and 4) what problems have they encountered in their post college experience? The answers to these questions can then be interpreted in the light of demographic and other background data.

The study draws upon the NCHEMS proposals (1979: 107-110) but also modifies it in several ways. In the first place, we have drawn upon a population of all alumni. Thus, the sample is a broader cross section, and less age-focused, than that suggested by NCHEMS. Second, we have drawn upon other sources in

constructing the questionnaire. Of particular value was the questionnaire developed by S. Hutcheson and D. Chapman of the University of Michigan. Their formulation of 1) skill and ability areas, and 2) problems encountered were employed fruitfully in the research presented here.

The effective study of student assessment of the value of their educational experience, and how race may influence that evaluation, requires a subjective study of a multiracial population. The alumni of Lincoln University, an historically black and currently multiracial institution, provided a uniquely appropriate population in which to examine these issues. We are grateful to those alumni of Lincoln University who took the time and trouble to fill out and return a rather extensive questionnaire.

The study of student assessment of their college experience requires direct contact with the student to elicit the assessment in question. In the present study it was determined to use the alumni newsletter of Lincoln University for this purpose. Accordingly, the September 1980 issue of the Harambee Newsletter contained a questionnaire of about three pages in length which contained a range of items concerning biographical information, evaluation of educational experience, possible changes in specialization, major or enrollment, and other opinions, goals and responses.

The newsletter was mailed to the approximately 3500 alumni of Lincoln University. Of these eligible respondents, 129

returned the completed questionnaires which form the data base for the present analysis. We cannot, of course, assume that the 129 respondents are statistically representative of all Lincoln alumni. The respondents form a self-selected minority who took the time to record their assessment of their educational experience.

However, while the sample cannot be regarded as statistically representative of the larger group it does have strengths. First, it is probable that those who were willing to take the time to respond felt a greater concern for these issues, or had reflected more deeply on the topics than their non-responding peers. The quality of the actual information we are analyzing may thus be high, albeit not susceptible to generalization.

Second, the respondents were diverse in age, race and sex. Attitudes and reactions which result from major demographic factors are, therefore, apt to be reflected in the data. There is also a wide range of academic majors represented in the sample. The diverse profile of the respondents increases the liklihood that major patterns in the population will be discernable in the sample data as well.

Several of the variables to be examined (Employment Problems, Skills and Ability Areas, and Program Changes) combine alumni responses,into Likert-type scales where the answers are weighted from strong to weak, and added to determine an overall sample (or sub-sample) weight. The resulting mean is used for

comparative evaluation.

Analysis of patterns and variable relationships was conducted by the authors using SPSS through the computer facilities of Lincoln University. Where appropriate, the strength and significance of relationships was analyzed through the statistics of Gamma and Chi Square, respectively.

FINDINGS

Profile. Survey respondents represented a broad cross-section of Lincoln alumni. Table 1 reveals the patterns by Race, Sex, Year the student Left Lincoln, and Departmental Major. It can be seen that about three fourths of those who returned the questions were black, and slightly over half were female. Respondents attended the University at different times, throughout most of this century, and represent a wide range of majors.

Table 2 provides a crosstabulation between Race and each of the other major variables. The only variable in which the distribution is not roughly equivalent is Year Left Lincoln. Only a fraction of the respondents prior to 1960 were white, while by the most current period the racial balance is roughly comparable. These patterns reflect the changing enrollment patterns of the University. Gender and Departmental Major, on the other hand, show no significant differentiation based upon Race.

Changes? On the whole, the former students of the survey

seemed relatively content with their educational choices. This pattern is revealed in Table 3. When alumni were asked what they would be likely to change, given their present experience and knowledge, major changes received only weak support (Table 3). Nor does race appear to be a significant factor. White and black alumni concur that minor alterations in specializations, electives, and flexibility in career goal definitions are the most likely choices. "Do it all the same way" was a highly popular option for both. On the other hand, the idea of not enrolling is rejected by a strong margin. Delaying school to gain work experience, or attending a different university receive only limited support. The overall pattern is one of a consensus which prefers few and minor changes. Divergent rankings by race are minor compared with the overall similarity of reactions.

Assessment. Our most detailed information concerns the student evaluation of a range of skills in terms of: 1) the extent to which they are APPLIED in their current employment, 2) the extent to which they POSSESS the skill or ability in question, 3) the extent to which the skill or ability was ENHANCED by their study at Lincoln University, and 4) the extent to which they feel their program should have given great EMPHASIS to this ability.

The respondent rated the ability in each of the above four areas as being to a large extent (4), some extent (3), a small extent (2), or none at all (1). To begin with an overview, the Skill and Ability Areas have been combined into general types

which, along with their corresponding means are shown in Table 4.

The ALL SKILLS section of Table 4 provides a general summary and useful standard of comparison. Respondents tend to feel that they must apply most of the skills between some extent and a large extent (3.50). In general, they tend to feel that they possess the skills to slightly less than their current employment applies them, although the detailed data show exceptions to this tendency. The alumni feel that their study enhanced their skills to some extent (2.93), but not to the extent that they feel they possess the skill. It seems possible to infer that they have acquired a portion of their skills of various types at work, or in other non-academic settings. The extent to which this is true varies by the skill in question. Finally, they tend to believe that most skills should be given great emphasis in a college program. In general this emphasis slightly exceeds the extent to which they feel they possess the skill (3.43 to 3.37, overall).

Turning to the overall comparison by race, we find that the differences are quite small. The only discrepancy worthy of note is that black respondents feel that the skills are more likely to be applied in their current employment by a moderate extent (3.56 to 3.40). This pattern is found in most specific skill areas, and may reflect the tendency for minorities to have, and to feel they have, more demanding standards placed upon them. For the rest, the striking fact is how small the differences are between

white and black respondents.

Turning to the general skill areas, Social Skills are seen as the category most applied, and most possessed by the respondents. Analytical Skills are least possessed by the respondents (3.03, to some extent) but it is also the category least applied in current employment (3.09). College study has enhanced all skill areas "to some extent", but it always lags behind the extent to which the skill is possessed. The emphasis which colleges should give to the skill is high, although generally it lags behind the extent to which the skill is applied, or even possessed. The striking exception is in the area of Analytical Skills where respondents feel they should be emphasized to a greater extent than they are applied or possessed (3.29 to 3.09 and 3.03). It may also be noted that respondents felt these skills were enhanced least by college study, between some and a little (2.69).

Racial comparisons reveal some differences within specific categories of skills. In all categories, blacks feel the skills are applied to a greater extent than do whites. The discrepency is greatest in the area of Analytical Skills (.29), which is also the only area where whites report they more strongly possess skills than do blacks (by .11). In the area of Analytical Skills, white respondents place greater emphasis upon Analytical Skills in a college program than blacks by a .19 margin.

In other areas, particularly Social (.13) and Communication (.11) Skills, black alumni report greater competence than white

respondents. They also feel that they gained more from their college education (.10 and .18 respectively), and place greater emphasis on these skills (.11) than do whites. In one of the areas are the differences large, and in the area of Work Skills, the differences are minute.

Turning to responses to the specific items (Table 5), further illustrates the similarities and differences. For example, while both white and black respondents report (Table 5A) that the ability to communicate with others is the most important skill applied in their current employment (3.85), blacks report greater application of its specific forms (writing, speaking, and persuasion). Blacks also report greater skills in speaking (.25) and persuasion (.14). Only in writing do white respondents report more skill development (.07), although both report they possess as much of this ability as their employment requires.

Blacks consistently feel that college has played a larger role in enhancing skills than do whites, in the case of writing by a .49 margin. Except for persuasion, blacks also place greater emphasis upon communication skills in a college program (.38 for writing, .24 for speaking). Both blacks and whites rate the enhancement of their persuasive ability by college study as less than that in other areas.

Analytical Skills (Table 5B provides the most diverse set of information on alumni skills and attitudes. Note, for example, the wide range of levels of application from 3.69 (Developing New Approaches to Problems) to 2.28 (Using Computers).

The specific skills are also of interest. Blacks and whites rate themselves similarly in terms of possessing the ability to Develop New Approaches to Problems, but the former feel this ability is applied to a far greater extent in their employment, and thus experience a much larger gap between need and capability (.36) than do white alumni (.07). Also, although blacks feel that they have received less from their college education in this area than whites (by a margin of .35), they would nevertheless place less emphasis upon it (by a margin of .17).

In Analyzing Ideas, blacks feel it is demanded more (.15) and they possess it more (.05) than whites. Both got about the same enhancement from college, but white alumni would put greater emphasis upon it in their program (.19)

Using Library and Research Facilities is, perhaps, the most unique category of all in one respect. All respondents feel they have more than enough of the skill in question. Whereas in virtually all other skills the respondents felt they fell short of what was applied in their current employment, in Library and Research they feel they have an excess. This is true for blacks (+.28), whites (+.53) and ALL (+.34). This is also the only skill where college was seen as contributing more than the amount applied, and almost all of the skill posssessed by the respondent. Nevertheless, all respondents continue to support a strong emphasis on this skill, much stronger, in fact, than current employment would require. We can only surmise that library and research skills must be seen as a useful tool which

is necessary when required.

Interpreting Numerical Data, and Using Computers, are distinguished by a much lower rate of application than for other skills. Respondents feel that they have as much ability to interpret numerical data as their job requires but, in contrast to library skills, a lower portion of their ability was enhanced by university education. So, too, would they place less emphasis upon this skill in a college program--although they would place more than they have, or than their jobs require.

Using Computers is distinguished by the low rate of application, but, more, by the low rate of college enhancement of skills. It might be assumed that this is related to age and time of graduation, but further analysis of these data cast doubt upon such an interpretation. Alumni leaving Lincoln since 1970 report an enhancement of ability to use computers of 1.56, compared with 1.31 for those leaving Lincoln during 1970 or before--a minute difference compared to the enhancement found in other areas. The amount of emphasis placed upon computer training is similar for all cohorts (2.68 to 2.64 to 2.69), and the gap between emphasis and enhancement is greatest for those who have left Lincoln since 1970 (1.12).

Relatively high application and emphasis is placed on all three work skills (Table 5C). Blacks feel particularly high demands for the organization of time. Blacks also report more skills in the area, whites report more planning skills, and both report equal capabilty to work on long term projects. These

skills are enhanced "some" but, as usual, less than they are held and required.

The pattern on Social Skills is comparable to that of Communication Skills. Blacks possess, and feel the need to apply, these skills to a greater extent than whites. Both received "some" enhancement of their social Skills from their college study. Curiously, white respondents would place a greater emphasis upon these skills in three of four areas. The sole exception is the ability to Supervise and Lead which blacks emphasize by .24 more than whites.

In concluding the analysis of the skills assessment, we would return to several general points. First, the differences between black and white respondents are slight, and those that exist fall into a few specific areas: 1) black alumni feel a higher skill level is required by their employment than do white alumni, and 2) black respondents tended to feel stronger in areas of Communication and Social Skills, while white respondents tended to feel more competent in analytic areas; in no case was the discrepency sizable.

Second, all respondents felt 1) that they were slightly weaker in the various skills than their employment required, 2) that they had received some, but usually not most, skill enhancement from their college education, and 3) that they supported considerable college emphasis upon skills of all types.

Table 6 shows the weighted pattern of the three biggest problems alumni encountered in seeking their first job, scored three points for largest, two for second largest, and one for third largest. The pattern clearly reveals that inadequate education or skill qualifications plays no more than a minor role in limiting job opportunity. The result shown in Table 6 is statistically significant at the .05 level. Specific analysis suggests that the difference is largely due to the adverse effect which discrimination has upon minorities. The tight job market, in contrast, is viewed comparably by black and white alumni alike.

DISCUSSION

The purpose of the present study has been to employ data gathered from an alumni survey to provide new insight into how students view their college experience after they have had the opportunity to try it out in the workplace. A parallel objective has been to compare responses based upon the race of the respondents. The multiracial alumni of Lincoln University provided an excellent source of information for the inquiry.

Regarding the most general question, the alumni who responded to the survey appear to have received value from, and to value, their college education. The idea of not attending college was lowest on their list of possible changes, and was, in fact, overwhelmingly rejected. The popular choices involved

increased flexibility, minor alterations, or "doing it all the same way".

Similarly, the educational process was generally acknowledged to have enhanced virtually all skills that the respondent possesses and applies. Further, the amount of emphasis which these alumni would recommend is typically higher than the skill enhancement which they record. The clear implication is the desire for more, not less, of the benefits which a college education provides.

Respondents report a general pattern of a somewhat lower skill level than their current employment applies, and this reinforces the idea of a need for greater, or more effective, college exposure. Nevertheless, only a small percentage reported low educational or skill qualifications as an obstacle to the acquisition of their first job. Discrimination, and employment opportunity generally, appear to present the major difficulties in first job searches.

The general pattern described above is not dependent upon the race of the respondent. The most striking racial pattern is the absence of significant attitudinal differences between black and white alumni. Nevertheless, blacks experienced more job discrimination, and felt that the skill applications were generally more intensive than did their white counterparts Minor differences exist in relative skill areas (blacks tend to feel more accomplished in social and communication skills, whites in the area of analytical skills), and these may have some policy

implications but, in general, the pattern of essential similitude prevails.

The potential effect which these findings might have on institutional policy cannot be determined apart from other forms of institutional evaluation. We can note, however, the skill areas which the data suggest deserve special attention. First, all respondents rated "Communicating with Others" as the area where they would place the greatest emphasis. "Speaking Effectively" was one skill where the discrepency between possession and application was relatively high for both black (.21) and white (.27) alumni. White respondents also showed significant discrepencies in "Communicating with Others" (.23) and "Persuading Others" (.20). Together, these findings suggest that communication skills are important to all students, but multiracial universities may want to particularly note the felt deficiencies of their white students in this area.

Second, the Analytical Skills possessed were the lowest of the several categories. The greatest discrepancies in the area were for black alumni for the skills of "Developing New Approaches to Problems" (.36), and "Using Computers (.32). As a new area, the latter is naturally lower in application, possession and enhancement. However, it is important to note the large discrepency which all students felt between the extent to which their computer skills were enhanced by college study, and the emphasis which they would presently place on such a program (1.28). It has been predicted that computer literacy will be the

next major class barrier (Molnar, 1978, Billings and Moursand, 1979), and it is essential that institutions which serve disadvantaged populations institute policies which prevent or minimize such developments.

Third, among work skills all alumni considered an emphasis upon "Organizing Time Effectively" to be a high priority. Black respondents had a particularly high discrepency between application and possession (.38). As in other areas, this was not because they possessed less of this ability than white respondents (in fact, they rated themselves higher), but because of greater felt demands upon them.

Fourth, social skills were given generally high emphasis, with black respondents having the greatest application/possession discrepency in the area of Supervising and Leading (again, due to high demands) and white respondents manifesting the largest imbalance in "Resolving Conflicts".

In conclusion, it seems that, while our respondents clearly value their college experience, and would make few major changes, the areas where they felt the greatest need for improvement were somewhat participatory in nature: communicating, resolving conflicts, managing time, developing new approaches to problems and providing leadership. These skills cannot be enhanced simply through better texts, different subject matter or more effective presentation of material. Improvement in these areas will require regarding the student as a whole person, and involving the student in a participatory way. Such a process, while not

easily instituted, appears to hold the greatest promise of further increasing the value of the college experience for the next generation of students.

RACE	
Black	91
White	32
Other	01
Int'l	01
Missing	04
	129

TABLE 1A

SEX	
Male	59
Female	65
Missing	05
	129

TABLE 1B

YEAR LEFT LINCOLN	
1920-1960	49
1961-1970	30
1971-1980	44
Missing	06
	129

TABLE 1C

DEPARTMENTAL MAJOR	
Education and Psychology	26
Business and Economics	18
Social Science	15
Natural Science	13
Agriculture and Home Ec	10
Health and Phys Ed	09
Other	20
Missing	18
	129

TABLE 1D

TABLE 1. RACE, SEX, YEAR LEFT LINCOLN AND MAJOR OF RESPONDENTS

	Black	White
Male	43	14
Female	47	16

TABLE 2A

	Black	White
1920-60	44	3
1961-70	19	9
1971-80	23	20

TABLE 2B

	Black	White
Education and Psychology	19	7
Business and Economics	12	5
Social Science	11	3
Natural Science	10	2
Agriculture and Home Ec	7	3
Health and P.E.	6	2
Other	16	3

TABLE 2C

Chi Square for A=.01, B=18.76, and C=1.71. Chi Square for B is statistically significant at the .001 level. Chi Square for A and C are not statistically significant.

TABLE 2. RACE BY SEX, YEAR LEFT LINCOLN, AND MAJOR.

	Black	White	All
More flexible in career goals	2.65	2.38	2.60
Take different electives	2.39	2.25	2.37
Do it all the same way	2.33	2.37	2.36
Change specialization	2.21	2.26	2.24
Change major	2.18	2.11	2.18
Not attend Lincoln University	1.52	1.87	1.58
More work experience first	1.29	1.55	1.36
Not enroll at all	1.13	1.17	1.14

TABLE 3. PROGRAM CHANGES IF ENROLLING TODAY.

SKILLS (Race)	Apply	Possess	Enhanced	Emphasis
Communication				
Black	3.67	3.55	3.23	3.53
White	3.58	3.44	3.05	3.42
ALL	3.66	3.52	3.19	3.52
Analytical				
Black	3.29	2.98	2.65	3.23
White	3.00	3.09	2.73	3.42
ALL	3.09	3.03	2.69	3.29
Work				
Black	3.58	3.35	2.84	3.42
White	3.48	3.36	2.93	3.34
ALL	3.57	3.37	2.89	3.43
Social				
Black	3.71	3.56	2.93	3.45
White	3.53	3.43	2.83	3.44
ALL	3.68	3.54	2.93	3.48
ALL SKILLS				
Black	3.56	3.36	2.91	3.41
White	3.40	3.33	2.89	3.41
ALL	3.50	3.37	2.93	3.43

TABLE 4. SKILL RATINGS BY CATEGORY AND RACE

SKILLS (Race)	Apply	Possess	Enhanced	Emphasis
Writing Effectively				
Black	3.54	3.53	3.56	3.57
White	3.46	3.60	3.07	3.19
ALL	3.54	3.56	3.42	3.49
Speaking Effectively				
Black	3.73	3.52	3.26	3.61
White	3.54	3.27	3.21	3.37
ALL	3.69	3.44	3.26	3.56
Persuading Others				
Black	3.56	3.42	2.77	3.20
White	3.48	3.28	2.71	3.36
ALL	3.56	3.38	2.78	3.29
Communicating With Others				
Black	3.85	3.75	3.31	3.73
White	3.85	3.62	3.21	3.74
ALL	3.86	3.71	3.29	3.75

TABLE 5A. COMMUNICATION SKILLS BY TYPE AND RACE

SKILLS (Race)	Apply	Possess	Enhanced	Emphasis
Developing New Approaches to Problems				
Black	3.74	3.38	2.84	3.50
White	3.50	3.43	3.19	3.67
ALL	3.69	3.41	2.95	3.56
Analyzing and Evaluating Ideas and Presentations				
Black	3.61	3.41	3.08	3.53
White	3.46	3.36	3.07	3.72
ALL	3.59	3.46	3.11	3.59
Using Library and Research Facilities				
Black	3.00	3.28	3.29	3.40
White	2.88	3.41	3.35	3.58
ALL	2.98	3.32	3.30	3.44
Interpreting Numerical Data				
Black	2.82	2.80	2.53	3.05
White	3.00	3.04	2.63	3.38
ALL	2.91	2.88	2.58	3.17
Using Computers				
Black	2.31	1.99	1.40	2.66
White	2.15	2.21	1.41	2.76
ALL	2.28	2.07	1.42	2.70

TABLE 5B. ANALYTICAL SKILL BY TYPE AND RACE

SKILLS (Race)	Apply	Possess	Enhanced	Emphasis
Organizing Time Effectively				
Black	3.82	3.44	3.00	3.54
White	3.41	3.34	2.81	3.42
ALL	3.68	3.42	2.97	3.54
Planning and Organizing Job Related Activities				
Black	3.69	3.40	2.83	3.47
White	3.67	3.52	2.88	3.32
ALL	3.68	3.45	2.88	3.45
Working on Long Term Projects				
Black	3.24	3.22	2.67	3.26
White	3.36	3.22	3.13	3.28
ALL	3.29	3.25	2.81	3.30

TABLE 5C. WORK SKILLS BY TYPE AND RACE

SKILLS (Race)	Apply	Possess	Enhanced	Emphasis
Supervising and Leading				
Black	3.73	3.53	3.04	3.53
White	3.52	3.37	2.88	3.29
ALL	3.69	3.50	3.02	3.50
Cooperating With A Work Team				
Black	3.78	3.68	3.20	3.45
White	3.64	3.59	3.09	3.50
ALL	3.75	3.67	3.20	3.50
Dealing With the Public				
Black	3.76	3.63	2.92	3.48
White	3.48	3.48	2.82	3.56
ALL	3.71	3.60	2.93	3.53
Resolving Conflicts in Work Situations				
Black	3.56	3.42	2.54	3.33
White	3.48	3.28	2.57	3.41
ALL	3.56	3.41	2.58	3.39

TABLE 5D. SOCIAL SKILLS BY TYPE AND RACE

	Black		White	
Skill and Ed Qualifications	43	1	11	1
Race and Sex Discrimination	53	1	5	1
Tight Job Market	80	1	23	1
Specific Job Requirements	70	1	27	1
Uncertainty and Confusion	42	1	19	1
Other	43	1	10	1

Chi square for weighted problems equals 11.21, $p<.05$.

TABLE 6. BIGGEST PROBLEMS IN SEEKING JOB.

REFERENCES

Billings, Karen and Moursand, David Are you computer literate? Forest Grove, Oregon: Dilithium Press.

Bowen, H.R. (Ed.). Evaluating institutions for accountability: new directions for institutional research (No. 1). San Francisco: Jossey-Bass, 1974.

Bowen, H.R. Investment in learning. San Francisco: Jossey-Bass, 1978.

Dumont, Richard G. and Troelstrup, Richard L. Exploring relationships between objective and subjective measures of instructional outcomes. San Diego, Cal.: Paper presented at the Nineteenth Annual Forum of the Association for Institutional Research, May 13-17, 1979.

Duncan, O.D. Inheritance of poverty or inheritance of race? In D.P. Moynihan (Ed.), Understanding poverty. New York: Basic.

Fincher, C. Economic and sociological studies of educational effects. The Educational Forum, January 1979, pp. 139-151.

Gray, Robert G. Jacobson, Edmund, Micek, Sidney S., Patrick, Cathleen, Renkiewicz, Nancy, and Van Dusen, William. Student-outcomes questionnaires: an implementation handbook. Boulder, Col.: NCHEMS, 1979

Lenning, Oscar T., Lee Y.S., Micek, S.S., and Service, A.L. A structure for the outcomes of post-secondary education. Boulder, Col.: NCHEMS, 1977.

Molnar, Andrew R. The next great step in American education: computer literacy. The Journal July/August 1978, pp. 35-38.

Micek, S.S., and Arney, W.R. The higher education outcome measures identification study: a descriptive summary. Boulder, Col.: NCHEMS, 1974.

Miller, Richard I. The assessment of college performance. San Francisco: Jossey-Bass, 1979.

Peterson, Richard E. and Uhl, Norman P. Formulating college and university goals: a guide to using the IGI. Princeton, N.J.: Educational Testing Service, 1977.

Sagen, H. Bradley Evaluation of performance within institutions. In H.R. Bowen (Ed.), Evaluating Institutions for Accountability. San Francisco: Jossey-Bass, 1974.

Solmon, L.C., and Taubman P.J. Does college matter? Some evidence of the impacts of higher education. New York: Academic Press, 1973.

Weiss, Randall The effect of education on the earning of blacks and whites." Review of economics and statistics. May 1970, pp. 150-159.